

THEFT DETERRENT TAG

CROSS REFERENCE TO RELATED APPLICATIONS

5 This application is a continuation of United States Application Serial No. 10/154,735 filed May 23, 2002, which claims priority from U.S. Provisional Patent Application Serial No. 60/293,688, filed May 25, 2001; the disclosures of both are incorporated herein by reference.

BACKGROUND OF THE INVENTION

10 1. TECHNICAL FIELD

The present invention generally relates to anti-shoplifting devices and, more particularly, to a theft deterrent tag that may be secured to articles of merchandise in order to hold an EAS tag to the item of merchandise while the item of merchandise is displayed for sale. The theft deterrent tag is removed from the item of merchandise by the sales clerk at the time of purchase. Specifically, the present invention relates to a theft deterrent tag that has a stepped post that is adapted to pass through an item of merchandise to connect the tag to the item of merchandise. The stepped post is configured to lock between locking teeth until the locking members are moved from a locked position to an unlocked position.

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2. BACKGROUND INFORMATION

Various anti-theft mechanisms exist in the art for attaching electronic article surveillance (EAS) tags to items of merchandise so that the items of merchandise cannot be removed from a retail establishment without triggering an alarm. One type of relevant device uses a pin to pierce a portion of the item of merchandise to secure the tag to the item of merchandise. Users of these tags desire a tag that is easier to use and less expensive to purchase and apply to merchandise. The users of these tags also desire a theft deterrent tag that is disposable so that the merchant does not have to reattach the security tags after they are removed by the sales clerk.

BRIEF SUMMARY OF THE INVENTION

The invention provides a theft deterrent tag that includes first and second elements that lock together through a portion of an item of merchandise to secure the tag to the item of merchandise. The first portion of the tag includes a first locking member having opposed teeth that are adapted to lockingly engage a second locking member that is carried by the second element of the tag. The second locking member is in the form of a stepped post that snaps between the opposed teeth to lock the post to the teeth. The post is configured to be passed through a wide variety of different items of merchandise.

The invention also provides a theft deterrent tag that is disposable. The tag may be moved from the locked position to the unlocked position by moving

the teeth with respect to the post. A portion of the body of the first element may be destroyed while moving the teeth from the locked to the unlocked position.

The invention further provides an opener for the tag wherein the opening includes a prong that engages the first locking member of the tag to move the first locking member from the locked position to the unlocked position. In one embodiment, the invention fixes the position of the prong with respect to a plunger that holds the tag. The plunger is used to drive the tag down over the prong to unlock the tag from the merchandise.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Fig. 1 is a top plan view of the theft deterrent tag of the present invention connected to a portion of an item of merchandise.

Fig. 2 is a section view taken along line 2-2 of Fig. 1.

Fig. 3 is a section view taken along line 3-3 of Fig. 1.

Fig. 4 is an exploded section view of the theft deterrent tag in an unlocked and disassembled position with respect to a portion of an item of merchandise.

Fig. 5 is a section view taken along line 5-5 of Fig. 4.

Fig. 6 is a view similar to Fig. 4 showing the second element of the tag being pushed through the merchandise and into the first element of the tag.

Fig. 7 is a view similar to Fig. 6 showing the tag locked onto an item of merchandise.

Fig. 8 is an enlarged view of the encircled portion of Fig. 7.

Fig. 9 is a section view taken along line 9-9 of Fig. 7.

Fig. 10 is a section view taken along line 10-10 of Fig. 7.

Fig. 11 is a front elevation view of an opener for unlocking the tag.

Fig. 12 is a section view taken along line 12-12 of Fig. 11 with the tag
5 having the item of merchandise being inserted into the opener.

Fig. 13 is a section view similar to Fig. 12 showing the tag and item of
merchandise inserted into the opener ready to be unlocked.

Fig. 14 is an enlarged section view of the front portion of the tag before
the plunger of the opener is depressed.

10 Fig. 15 is a section view taken along line 15-15 of Fig. 14.

Fig. 16 is a view similar to Fig. 13 showing the plunger of the opener
being depressed.

Fig. 17 is a view similar to Fig. 14 showing the tag while the plunger of the
opener is depressed.

15 Fig. 18 is a section view taken along line 18-18 of Fig. 17.

Fig. 19 is an enlarged view of the encircled portion of Fig. 18.

Similar numbers refer to similar parts throughout the specification.

DETAILED DESCRIPTION OF THE INVENTION

20 The theft deterrent tag of the present invention is indicated generally by
the numeral 10 in the accompanying drawings. Tag 10 is adapted to hold an
electronic article surveillance (EAS) tag 12 (Fig. 5) in a secure manner to an item

of merchandise 14 so that item of merchandise 14 cannot be removed from a retail establishment without triggering an alarm. Tag 10 thus frustrates shoplifting attempts. Tag 10 generally includes a first element 20 and a second element 22 that snap together in a locked position through a portion of item of merchandise 14 to secure tag 10 to merchandise 14.

First tag element 20 includes a body 24 that defines at least a first chamber 26 configured to house EAS tag 12. First tag element 20 includes opposed ribs 28 and 30 that cooperate together to hold a first locking member 32 in body 24. Body 24 is typically formed in two halves that are snapped together over first locking member 32 so that first locking member 32 is clamped between ribs 28 and 30. In other embodiments of the invention, body 24 may be integrally molded, glued together, or assembled in other manners known to those skilled in the art.

Body 24 also includes a hood 34 that provides an interior chamber to receive the extending portion of a second locking member 36 that protrudes through a portion of first locking member 32 when tag 10 is in the locked position. Body 24 may have smooth outer edges so that it does not snag on items of merchandise with which it is used.

Body 24 defines an opening 40 aligned with first locking member 32 so that a key prong 42 (Figs. 14 and 17) may enter first element 20 and move first locking member 32 from the locked to the unlocked position. Opening 40 may be covered by a seal 44 that prevents the user of tag 10 and a potential

shoplifter from viewing first locking member 32. Seal 44 is broken by prong 42 when tag 10 is unlocked as depicted in Figs. 14-18. Seal 44 may be integrally molded with body 24. As depicted in Fig. 5, seal 44 has a thickness that is substantially less than the thickness of the other walls of body 24.

5 First locking member 32 includes an elongated slot 50 and an opening 52 as depicted in Fig. 9. Locking member 32 includes opposed teeth 54 that define of slot 50. Teeth 54 engage second locking member 36 to prevent second locking member 36 from being removed from first element 20 when second element 22 is moved from the unlocked to the locked position. Second locking member 36 may be in the form of a post 60 having a plurality of steps 62 designed to interact with teeth 54 to lock post 60 with respect to first locking member 32. The outer diameter of post 60 is thus greater than the space between teeth 54 as shown in Figs. 7 and 9. The end of post 60 may be pointed to help it move through slot 50.

15 First locking member 32 may be angled into a "V" shape as depicted in Fig. 4 to increase the strength of the connection between first locking member 32 and second locking member 36. The point of the "V" is pointed away from the removal direction to make it hard to pull post 60 out of member 32.

20 Tag 10 is locked by placing a portion of merchandise 14 between second locking member 36 and first locking member 32. Post 60 of second locking member 36 is then pushed down through merchandise 14 through first element 20 until it engages first locking member 32. Step 62 of post 60 snaps through

teeth 54 until the body of second element 22 clamps merchandise 14 between itself and first element 20. Tag 10 thus cannot be removed from merchandise 14 until first locking member 32 is moved to the unlocked position.

5 The user moves first locking member 32 to the unlocked position by sliding first locking member 32 from the locked position depicted in Figs. 9 and 14 to the unlocked position depicted in Fig. 17. One way of achieving this movement is to place tag 10 in an opener 70 that includes a base 72 and a plunger 74. Plunger 74 is movable with respect to base 72. Base 72 supports prong 42 in a fixed position with respect to plunger 74. Tag 10 may be placed
10 into plunger 74 as depicted in Figs. 12 and 13. The user then depresses plunger 74 as depicted in Figs. 16-19 so that post 60 will be aligned with opening 52. Body 24 includes a stop wall 78 that abuts against locking member 32 when opening 50 is aligned with post 60. Plunger 74 is also configured to only depress tag 10 a distance sufficient to move locking member 32 so that
15 opening 52 aligns with post 60. After plunger 74 has been depressed, the user may remove element 22 and merchandise 14 from element 20 and dispose of tag 10.

In another embodiment, a hand held opener may be used. In another embodiment, the user may strike the tag on a counter to drive a member against
20 locking member 32.

In the foregoing description, certain terms have been used for brevity, clearness, and understanding. No unnecessary limitations are to be implied

therefrom beyond the requirement of the prior art because such terms are used for descriptive purposes and are intended to be broadly construed.

Moreover, the description and illustration of the invention is an example and the invention is not limited to the exact details shown or described.